Technical Report 518

MILITARY, BIOGRAPHICAL, AND DEMOGRAPHIC CORRELATES OF ARMY CAREER INTENTIONS

John P. Allen

ARI FIELD UNIT AT FORT BENJAMIN HARRISON, INDIANA

U. S. Army
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JOSEPH ZEIDNER
Technical Director

FRANKLIN A. HART
Colonel, US Army
Commander

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This report explores organizational and personal correlates of intentions to reenlist or remain on active duty in the Army for both offices and enlisted service members.

Prediction of career intention proved to be efficient and parsimonious for enlisted personnel. Only three characteristics (time in service, age, and job satisfaction) cumulatively accounted for 48% of the variance in the

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criterion. Among officers, nine predictors explained only 41% of the variance. Other variables associated with enlisted career intention were certain types of military occupational specialty and units of assignment, education, race, and appraisal of other members of the unit. Officer correlates of career intention were age, time in service, certain types of occupational specialties, and units of assignment, deviance, and assessment of unit readiness.

Implications of these correlates are presented from perspectives of possible Department of the Army policy initiatives and considerations in unit personnel management style.

Technical 518

MILITARY, BIOGRAPHICAL, AND DEMOGRAPHIC CORRELATES OF ARMY CAREER INTENTIONS

John P. Allen

Submitted by:
Ralph R. Canter, Chief
ARI FIELD UNIT AT FORT BENJAMIN HARRISON, INDIANA

Approved by:

Cecil Johnson, Acting Director
MANPOWER AND PERSONNEL
RESEARCH LABORATORY

U.S. ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES
5001 Eisenhower Avenue, Alexandria, Virginia 22333

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FOREWORD

Manning and maintaining the force is one of the most critical problems facing the Army during the 1980s. In light of the serious nature of the problem, the Army Research Institute for the Behavioral and Social Sciences (ARI) has redoubled its efforts to understand and improve the Army's ability to recruit and retain the quantity and quality of personnel necessary to fulfill the Army mission.

During FY 80, the ARI Field Unit at Fort Benjamin Harrison, Ind., was given the responsibility of looking at two aspects of the problem: the causes of first tour attrition among enlisted personnel and the factors underlying intention to remain with the force (career intent). The present report, prepared under Army Project Number 2Q162722A791, represents the field unit's first effort in exploring the factors which support career intention within both the enlisted and officer force.

JOSEPH ZEIDNER
Technical Director

MILITARY, BIOGRAPHICAL, AND DEMOGRAPHIC CORRELATES OF ARMY CAREER INTENTIONS

BRIEF

Requirement:

To determine demographic and military correlates of career intention among U.S. Army enlisted and officer personnel.

Procedure:

Demographic military characteristics and indices of commitment to continuation in the Army were gathered from 10% of the enlisted personnel and 30% of the officers serving at Fort Lewis, Wash., and Madigan Army Medical Center, Wash., in June 1978.

Data from the two rank groups were analyzed separately by means of multiple linear regression and eta analyses. These statistical analyses revealed the degree of relationship of demographic and military variables with expressed career intention.

Findings:

Among enlisted personnel, three variables (time in service, age, and job satisfaction) cumulatively accounted for 48% of the variance in career orientation. Other predictor variables included educational level, being black, occupational specialties 91 or 13, assessment of other members of the unit, assignment to a Ranger unit, and maintenance of nontraditional religious beliefs.

Prediction of career intention among officers was less efficient, with nine predictors explaining only 41% of the variance in the criterion. As with the enlisted, time in service, age, and job satisfaction were important correlates. Occupational specialties of physician, dentist, and field artillery; perceptions of unit readiness; deviance; and assignment to a medical unit were additional determinants.

Utilization of Findings:

Findings are discussed in terms of past research and possible implications for Department of the Army policy and unit personnel management. Among the implications, recommendations are made for consideration of targeting recruiting efforts toward an older segment of the civilian population, particularly for communications zone and combat service support units; raising levels of job satisfaction within units by structuring and presenting tasks in a manner which allows subordinates to see them as meaningful, varied, and

somewhat under their own control; and developing additional special status units into which transferred Rangers might be reassigned.

MILITARY, BIOGRAPHICAL, AND DEMOGRAPHIC CORRELATES
OF ARMY CAREER INTENTIONS

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MILITARY, BIOGRAPHICAL, AND DEMOGRAPHIC CORRELATES OF ARMY CAREER INTENTIONS

INTRODUCTION

Continued viability of the modern volunteer Army depends fundamentally upon adequate numbers of personnel to man the force. In the past few years the Army has either failed to achieve endstrength goals or has been forced to divert considerable resources to do so. A variety of research and personnel management efforts has consequently been directed to areas of recruitment, reduction of first tour attrition, and reenlistment. In many respects, the last means, increasing rates of reenlistment, is the most desirable approach to attacking the manpower shortage problem. A continually diminishing pool of potential enlistees (18- to 22-year-olds) likely will mean that recruitment efforts will become even more difficult, will require that admission standards be further relaxed, will argue for enhancement of initial military bonuses, and ultimately will raise government financial obligations for veterans' benefits. While efforts to reduce first tour attrition should continue to be refined, it remains unclear whether most service members who leave during their first enlistment are potentially salvageable through better personnel management, or, should they be retained, if they would substantially contribute to unit preparedness.

On the other hand, there seems little doubt that the reenlistee is of proven value to the Army. Obviously if reenlistment rates were increased, financial obligations incurred by the Federal Government for military retirement benefits would likely rise as well. Nevertheless, reenlistment as a means of increasing manpower has several advantages over more intensive recruitment and reduction of attrition efforts. Reenlistees have by their very nature more training and experience, and, as noted, are of proven reliability, having been tested by a previous successful tour of duty in the Army. Accession costs, which are quite high, particularly because of initial entry training, have already been borne for the reenlistee. Perhaps, most importantly, however, increasing sophistication and complexity of Army weaponry may well argue the need to change the ratio of career soldiers to first-tour soldiers, with additional demands for more senior people (Department of the Army, 1980).

Some Conceptual Issues in Reenlistment Research

Employee turnover research has been comprehensively reviewed by Porter and Steers (1973), Price (1977), and Mobley, Griffeth, Hand, and Meglino (1979). The conceptual model of Price is particularly helpful in understanding individual and organizational factors involved in job change. Research on military reenlistment variables has been critiqued and summarized by Hand, Griffeth, and Mobley (1977), while projects dealing specifically with Army reenlistment have been synopsized by Eaton and Lawton (1980). In light of these reviews, the reenlistment and turnover literature per se will not be reviewed in this report. However, in the discussion section, mention will be made of key military studies that have a bearing on current findings.

Some consistently high correlates of positive Army career intention include race (nonwhite), education (less), marital status (married), military job satisfaction (higher), and military specialty (noncombat).

Before considering the present research project, three theoretical issues merit consideration.

Following their literature review, Eaton and Lawton (1980) discussed an ongoing Army Research Institute (ARI) program on recruitment that contrasted various incentives on the basis of their impacts in encouraging soldiers to reenlist for 3 or 6 years. These researchers argued that the primary focus of future efforts in reenlistment research should be reenlistment correlates and determinants that are subject to managerial influence. They believed that traditional research on demographic and personal variables, while explaining some retention variance, tends to be of limited practical value to managers except, perhaps, where it predicts future reenlistment problems. Although research on dimensions that are directly under managerial manipulation and that appears to influence the career orientation of soldiers is perhaps most relevant (and indeed an area heretofore insufficiently explored), this author feels that demographic variables, even those outside direct managerial influence, suggest implications that can substantially aid military decision makers if the research findings are analyzed from a managerial perspective. An example of this is the Navy's current effort to attract people over age 21 into the service. This policy decision (Navy Recruiting Command, undated) is based on an awareness that age is in general positively correlated with reenlistment and retention as well as the projection that the nation's population of 18- to 21-year-olds will decline at least through the 1990s.

As Hand et al. (1977) note, reenlistment research should be multivariate in nature. Projects assessing the effects of single variables on reenlistment yield disparate, fragmented results that are difficult to incorporate into an overall reenlistment enhancing strategy by the services. More serious than this, however, simple bivariate relationships may be quite misleading. An example of this will be seen in the current project.[1]

A final issue concerns the strong distinction also drawn by Hand et al. (1977) between statistical validity in terms of significance levels and utility in terms of variance explained. As these authors note, with large numbers of subjects even small relationships may achieve statistical significance. Nevertheless, such variables should not be dismissed simply because the percentage of variance accounted for is far from overwhelming! If these

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[1]Among enlisted personnel the simple correlation between education and career intention is positive and significant. Nevertheless, the beta weight given to education in the regression equation is actually negative and significant at $p < .05$. While seemingly anomalous at first, these two relationships are statistically quite compatible. Education enters the regression equation only after several other variables, including years in service and age, have been parcelled out. Had one looked solely at the bivariate relationship of education and career intention, one would have drawn a misleading conclusion.

small associations are replicated in well-controlled studies and show solid external validity, they may be of considerable importance to Army and congressional planners. Although implementation of a policy or procedural change based on one or a few of these variables might increase retention or recruitment by only a small amount, when this improvement is projected onto the hundreds of thousands of soldiers in this country and the billions of dollars of personnel costs, the final yield may be substantial. This is particularly true if the cost of the initial research and the cost of implementation of program changes are relatively low when contrasted to the savings resulting from increased retention. The situation is analogous to a large-scale civilian labor- and capital-intensive organization where even small procedural changes may result in large personnel and financial savings. In a smaller organization, major changes would be required to achieve the same absolute cost-savings.

The current project is based on data derived from an earlier effort (Allen, 1980) designed to answer four questions: Is morale related to substance abuse among soldiers? What are the demographic correlates of substance abuse in the Army? How do alcohol abuse symptoms and signs cluster together among heavy-consuming personnel? What factors deter service members with substance abuse problems from voluntarily seeking treatment in the Army's rehabilitation program?

The aims of the current reanalysis of this data are as follows:

- To determine some personal and organizational characteristics independently and conjointly associated with military career intention among enlisted personnel and officers; and

- To explore some possible implications of these correlates in terms of future Army planning and personnel management.

The present research is directed at determining some of the demographic and military correlates associated with career intention among enlisted and officer personnel. Although the dependent variable in this project is career intention rather than actual reenlistment behavior, several studies have suggested a close relationship between the two phenomena (Boyd & Boyles, 1968; Cohen, Turney, Ross, Shiflett, & Borman, 1975; and Goldman & Worstine, 1980). Perhaps the most comprehensive research project dealing with the relationships of reenlistment intention with actual behavior is by Alley and Gould (1975), who report that the strength of the relationship for the Air Force increases as one approaches a formal career decision point. (For example, for airmen with 1 to 5 years' time in service the correlation is .14, while that for airmen with 3 to 4 years is .53.)

RESEARCH PROCEDURES AND DESCRIPTION OF VARIABLES

Subjects

Ten percent of the enlisted personnel (N = 1,715) and 30% of the officers (N = 527) assigned to the Ninth Infantry Division, Fort Lewis, Wash., and the Madigan Army Medical Center, Wash., served as participants in this

project. Subjects were randomly selected on the basis of their social security numbers. Officers were sampled more intensively than enlisted personnel to assure adequate statistical cell sizes for multivariate analyses. Participation in the survey was mandatory, and the only service members excused were those unavailable for the entire 2-week data collection period because they were confined in civilian jails or hospitals, officially reported as AWOL, or dropped from the rolls (DFR), or on leave.

Survey Instrument

The inventory consisted of 138 close-ended items and 1 open-ended item. Questions were drawn from several previous Department of the Army surveys or were constructed specifically for the current project. The sole criterion for selecting items from previous Army instruments was content validity (i.e., items were chosen that seemed to tap the areas of interest to the project). Survey topics were demographic and military characteristics; attitudes toward job, unit, and readiness; personal substance abuse; and military career intentions. A copy of the survey items is available from the author on request.

Administration Procedures

At Fort Lewis, battalion executive officers or their designees served as survey proctors. At Madigan, work section chiefs served as survey monitors and were given instructions similar to those for battalion executive officers. At the hospital, however, the survey was completed by each respondent working alone, whereas at Fort Lewis surveying was done in a group context with the survey monitor present.

In that this survey also dealt with some sensitive personal issues regarding use of illicit drugs and alcohol abuse (Allen, 1980) several precautions were taken to augment the validity of responses and to elicit candor:

1. A front-page article appeared in the post newspaper and several notifications were made in the daily bulletin prior to the project stating that a survey of general soldier concerns would be conducted, the responses would be anonymous, and subjects would be selected on the basis of their social security numbers.

2. At the time of the survey, each respondent was given a copy of a letter from the chief of staff or the hospital executive officer. This letter described the overall rationale of the project and stressed that confidentiality would be strictly maintained. Subjects were further encouraged to keep the letter as a written pledge of anonymity from the commander.

3. At the beginning of the survey, subjects were provided blank manila envelopes in which to place their response sheets when completed. They were instructed that at the end of the survey they were to seal the envelopes and place them into a "ballot box" container.

4. At the installation and the division, survey items and response alternatives were read to the participants, who also had the written questionnaire before them.

Description of Variables

Variables under study and subject characteristics are reported in Tables 1 and 2 for enlisted and officer personnel, respectively. Several variables require explanation beyond simply the noting of response alternatives on Tables 1 and 2.

1. Rank. Although Table 2 presents the actual sample breakdown on rank, the analyses treat rank solely as commissioned officer versus warrant officer. As indicated in Table 1, enlisted ranks were treated individually, without collapsing.

2. Marital status. Subjects who indicated they were widowed were recoded as blanks due to their small numbers (two officers and five enlisted).

3. Age. Over 39 years old was recoded as 39.

4. Time at installation. Condensed into the number of full 6-month periods to 42 months. Service members who had served at the installation longer than this were classed into the single category of above 42 months.

5. Time in service. Measured in full years, with 21 years and above recoded as 20 years.

6. Nature of unit. Not considered for officers if fewer than eight officers represented the type of unit. It was not considered for enlisted if fewer than 20 enlisted subjects were drawn from it.

7. Occupational specialty. Scored for commissioned officers and enlisted only if at least 3% of the subjects had the particular two-digit occupational code. It should be noted that the enlisted two-digit codes do not fully correspond to the current system of enlisted career management fields. Commissioned officers with specialties 60 or 61 were combined into the physician category. Occupational specialty was not scored for warrant officers due to the small sample sizes for specific job categories.

8. Career intention. Employed five monotonic response alternatives as well as an option of "unsure." "Unsure" responses were recoded as blanks for purposes of the analyses to retain the requisite unidimensionality of the scale.

9. Deviance. Measured by score on the first principle component derived from a six-item correlational matrix (which had unities imposed as diagonal elements). Scores were derived from the matrix

TABLE 1

Descriptive Statistics for Variables (Enlisted)

Variable	Number (%)	Mean, S.D.
Rank		
E1	31 (02)	
E2	203 (12)	
E3	318 (19)	
E4	596 (35)	
E5	300 (17)	
E6	158 (09)	
E7	71 (04)	
E8	28 (02)	
E9	10 (01)	
Race		
White	1064 (62)*	
Black	391 (23)	
Hispanic	91 (05)	
Others	155 (09)	
Sex		
Male	1597 (93)	
Female	113 (07)	
Marital Status		
Never married	753 (44)*	
Currently married	832 (49)	
Separated	43 (03)	
Divorced	80 (05)	
Education		
Less than high school diploma	207 (12)	
High school graduate or GED	896 (52)	
Some college	531 (31)	
College degree or beyond	73 (04)	
Full months assigned to installation		18.2, 11.3
Full years in military service		4.6, 5.3
Religion		
Protestant (incl. Episcopalian, Lutheran, and Mormon)	761 (45)*	
Roman Catholic	434 (26)	
Other religious beliefs	301 (18)	
No religious beliefs	207 (12)	
Age in years		24.1, 5.5
Nature of unit of assignment		
Combat arms		
Non-Ranger Infantry	521 (30)*	
Field Artillery	163 (10)	
Ranger Infantry	45 (03)	
Air Cavalry	72 (04)	
Air Defense Artillery	50 (03)	
Combat support		
Law enforcement	40 (02)	
Ordnance	75 (04)	
Engineer	104 (06)	
Maintenance	122 (07)	
Supply and Transportation	28 (02)	
Signal	139 (08)	
Aviation	74 (04)	

TABLE 1 Con't

Variable	Number (%)	Mean, S.D.
Nature of unit of assignment (Con't)		
Combat service support	129 (08)	
Administrative general	79 (05)	
Military intelligence	23 (01)	
Other types of units (Unclassified due to small size or mixed nature)	33 (02)	
Enlisted occupational speciality (code)		
Infantry (11)	409 (24)*	
Field Artillery (13)	114 (07)	
Communications (31)	51 (03)	
Signal (36)	81 (05)	
Maintenance (63)	83 (05)	
Motor (64)	62 (04)	
Administration (71)	54 (03)	
Supply (76)	109 (06)	
Medical (91)	99 (06)	
Food service (94)	70 (04)	
Other specialities (Unclassified due to small size)	583 (34)	
Career intention		
Not complete obligation	54 (03)	
Complete obligation and leave at that point	720 (42)	
Stay beyond obligation but not to retirement	159 (09)	
Stay till retirement and leave at that point	303 (18)	
Stay beyond retirement	41 (02)	
Unsure	426 (25)	
Job/Training Congruence		
In primary speciality	1047 (63)*	
In secondary speciality	154 (09)	
Outside occupational speciality but in area of other training or experience	237 (14)	
Outside of occupational speciality and not in area of other training or experience	221 (13)	
Deviance		.2808, .68
Job satisfaction **		
Perception of unit personnel **		
Perceived unit combat readiness **		

* Reference variable in regression analysis.

** In that these are factor scales on factors derived solely within this sample, scores are expressed in standard score form with a mean of 0 and a standard deviation of 1.

TABLE 2

Descriptive Statistics for Variables (Officers)

Variable	Number (%)	Mean, S.D.
Rank		
WO1	19 (04)	
WO2	26 (05)	
WO3	24 (05)	
WO4	7 (01)	
2LT	89 (17)	
1LT	71 (14)	
CPT	180 (34)	
MAJ	61 (12)	
LTC	39 (07)	
COL	11 (02)	
Race		
White	473 (90)*	
Black	13 (02)	
Hispanic	12 (02)	
Others	28 (06)	
Sex		
Male	487 (92)	
Female	40 (08)	
Marital status		
Never married	113 (21)*	
Currently married	376 (71)	
Separated or divorced	36 (07)	
Education		
Less than college degree	67 (13)	
Bachelors degree	238 (45)	
Some graduate school	72 (14)	
Graduate degree or beyond	150 (28)	
Full months assigned to installation		22.7, 12.7
Full years in military service		7.9, 5.7
Religion		
Protestant (incl. Episcopalian, Lutheran, and Mormon)	322 (61)	
Roman Catholic	139 (26)	
Other religious beliefs	35 (07)	
No religious beliefs	29 (06)	
Age in years		30.2, 5.2
Nature of unit of assignment		
Combat arms		
Non-Ranger Infantry	104 (20)*	
Field Artillery	40 (08)	
Rangers Infantry	8 (02)	
Air Cavalry	27 (05)	
Air Defense Artillery	9 (02)	
Combat support		
Law enforcement	8 (02)	
Ordnance	17 (03)	
Engineer	30 (06)	
Maintenance	25 (05)	
Signal	19 (04)	
Aviation	21 (04)	

TABLE 2 Con't

Variable	Number (%)	Mean, S.D.
Nature of unit of assignment (Con't)		
Combat service support		
Medical	136 (26)	
Administrative general	22 (04)	
Military intelligence	13 (02)	
Other types of units (unclassified due to small size or mixed nature)	48 (09)	
Commission Officer Occupational Speciality (Code)		
Infantry (11)	84 (19)*	
Armor (12)	15 (03)	
Field Artillery (13)	33 (07)	
Engineer (21)	23 (05)	
Communications (25)	27 (06)	
Physician (60, 61)	25 (06)	
Dentist (63)	14 (03)	
Nurse (66)	28 (06)	
Administrative MSC (67)	17 (04)	
Clinical MSC (68)	13 (03)	
Other specialities (unclassified due to small size	172 (38)	
Career intention		
Complete obligation and leave at that point	79 (15)	
Stay beyond obligation but not to retirement	47 (10)	
Stay until retirement but leave at that point	240 (46)	
Stay beyond retirement	14 (03)	
Unsure	139 (27)	
Job/Training Congruence		
In primary speciality	399 (77)*	
In secondary speciality	39 (08)	
Outside occupational speciality but in area of other training or experience	62 (12)	
Outside occupational speciality and not in area of other training or experience	18 (03)	
Deviance		-.6399, .25
Job satisfaction **		
Perception of unit personnel **		
Perceived unit combat readiness **		

* Reference variable in regression analysis.

** In that these are factor scales on factors derived solely within this sample, scores are expressed in standard score form with a mean of 0 and a standard deviation of 1.

for officers and enlisted combined. The six items and their loadings are as follows:

Use of marijuana in past month	.67
Abuse of drugs other than alcohol or marijuana in past month	.63
Number of nontraffic arrests	.38
Number of counseling statements	.35
Legal or disciplinary problems due to drinking	.31
Number of AWOLs	.14

Scores were calculated in number of half standard deviations above or below the mean, with scores above +5 recorded as +5 and those below -4 as -4. Mean and standard deviation scores on Tables 1 and 2, however, report measures of these scores in z-score form.

10. Job satisfaction, perception of unit personnel, and assessment of readiness measures are factor scores. Procedures employed in deriving factors and scores are explained at Appendix A and in Tables A-1 and A-2. Factor scores were collapsed into half standard deviation categories, with factor scores above 2.5 and below -2.5 recoded as 2.5 and -2.5, respectively.

Response alternatives to three items were not included in subsequent analyses. These are "Other types of units" (type of unit); "Other specialties" (occupational specialty); and "Unsure" (career intention). Also, officers were, as noted earlier, collapsed into warrant versus commissioned rather than treating the specific ranks within each. Item-by-item relationships across all variables are reported in Tables 3 and 4.[2]

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[2]Tables 3 and 4 depict single item interrelationships within the enlisted and officer groups. The statistical index assessing the degree of association differs according to the nature of the response alternatives for each variable (whether continuous or discrete) and, if continuous, according to the linearity versus curvilinearity.

In instances where both predictor and criterion involve polychotomous options, Cramer's V was computed. In some instances, Cramer's V, however, was not calculated because over 20% of the hypothetical cell frequencies were under 5. Also, the relationship between occupational specialty and type of officer (warrant or commissioned) was not computed since the officer specialty code is redundant upon the type of officer.

Eta was calculated if either of two conditions were met:

1. The criterion variable was continuous and the predictor was polychotomous; or

TABLE 3

Interrelationships Between Variables (Enlisted)

Predictors

Criteria	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Race	-																
2. Sex	03b	-	09b**		05b					31b**	32b**	09b**					
3. Marital Status	06c*		-														
4. Education	05b	08a**	21b**	-	08b*					25b**	23b**	07b*					
5. Religion	29c**		09c**		-												
6. Age	02b	09a**	49b**	31a**	14b**	-				22b**	24b**	08b*					
7. Rank	05b	10a**	46b**	28a**	14b**	76a**	-			18b**	21b**	10b**		55b**	29b**	13b**	13b
8. Time at Installation	11b**	01a	22b**	14a**	07b	20a**	37a**	-		16b**	16b**	04b		16b**	09b	09b	06b
9. Time in Service	06b	08a**	41b**	19a**	16b**	82a**	73a**	22a**	-	22b**	23b**	07b					
10. Nature of Unit	14c**		13c**		NC					-							
11. Occupational Speciality	12c**		11c		NC					NC	-						
12. Job/Training Congruence	05c		04c		08c**					NC	10c	-					
13. Deviance	-29a**	04a	22b**	-22a**	09b**	-33a**	-29a**	-05a*	-26a**	21b**	19b**	09b**	-				
14. Career Intention	10b**	10a**	31b**	06a*	11b**	60a**	58b**	25b**	58a**	15b*	19b**	11b**	-28a**	-			
15. Job Satisfaction	22b*	01a	17b**	06a*	07b	31a**	31b**	13b**	28a**	16b**	17b**	08b*	-31a**	47a**	-		
16. Perception of Unit Personnel	06b*	06a*	03b	-06a*	05b	02a	16b**	10b*	04a	21b**	08b	07b	-13a**	13a**	10a**	-	
17. Assessment of Readiness	02b	04a	05b	00a	12b**	11a**	14b**	10b	12a**	17b**	10b	02b	-10a**	13a**	08a**	11a**	

a - Pearson product-moment correlation
b - Eta
c - Cramers V
NC - Not completed due to more than 20% of cells having hypothetical frequencies under 5
* - $.05 \geq p > .01$
** - $p \leq .01$

Decimal points eliminated throughout the table

TABLE 4

Interrelationships Between Variables (Officers)

Criteria	Predictors 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Race	-															
2. Sex	05b	-	26b**		14b*					36b**	86b**	09b				
3. Marital Status	05c		-													
4. Education	20b**	08a	15b**	-	06b					36b**	16b	07b				
5. Religion	15c**		13c**		-											
6. Age	07b	00a	29b**	25 **	11b	-				35b**	36b**	15b**				
7. Commissioned or Warrant	14b**	-10a*	09b	-45 **	11b	22a**	-			53b**	NC	09b				
8. Time at Installation	05b	09a*	20b**	-04a	08b	22a**	06a	-		26b**	21b	07b				
9. Time in Service	05b	06a	28b**	03a	03b	85a**	35a**	22a**	-	29b**	21b	13b*				
10. Nature of Unit	NC		NC		NC					-						
11. Occupational Speciality	NC		NC		NC					NC	-					
12. Job/Training Congruence	NC		NC		NC					NC	NC.	-				
13. Deviance	02b	02a	12b*	-08a	10b	-04a	112a*	005a	-03a	13b	18b	09b	--			
14. Career Intention	04b	07a	16b**	-11a*	08b	39a**	18a**	09a*	47a**	22b	30b*	15b*	-11a*	-		
15. Job Satisfaction	10b	02a	09b	09a*	17b**	10a*	-13a**	04a	06a	23b*	.24b	08b	01a	25a**	-	
16. Perception of Unit Personnel	03b	07a	04b	10a*	06b	13a**	-03a	-04a	17a**	23b*	22b	10b	02a	15a**	02a	-
17. Assessment of Readiness	04b	10a*	06b	-07a	14b*	-09a*	00a	-05a	-04a	26b**	26b*	10b	02a	15a**	12a**	04a

a - Pearson product-moment correlation
b - Eta
c - Cramers V
NC- Not completed due to more than 20% of cells having hypothetical frequencies under 5
* - .05≥ p > .01
** - p ≤ .01

Decimal points eliminated throughout the table

RESULTS

Relationships between predictor variables and career intention were explored by multiple regression and eta analyses. Because the primary interest was on the cumulative effects of the gamut of predictors on career intention, stringent criteria were employed for assessing the relationships by means of eta rather than inclusion of the independent variable in the regression equation. Eta was employed only if three conditions occurred simultaneously.

1. The predictor variable was a multivalue continuous variable;

2. Its eta relationship to the criterion was significant ($p < .05$) and differed significantly from linearity ($p < .05$); and

3. Its curvilinear relationship with the criterion appeared to be conceptually meaningful.

Adherence to these criteria resulted in no predictor variable being excluded from the officer regression analyses. For enlisted, two variables (rank and time at the installation) met the criteria. Their relationships with career intention are portrayed in Figures B-1 and B-2 in Appendix B. Appendix C contains plots of bivariate relationships of occupational specialty with career intention (Figures C-1 and C-3) for both groups and nature of the unit with career intention for enlisted only (Figure C-2). (The relationship of nature of the unit with career intention is not represented for officers because it was not significant at $p \leq .05$.) Appendix C is provided only to aid the reader in visualizing differences in means, since the predictors displayed in Appendix C were entered into the regression analysis.

With the exceptions noted above, response alternatives presented in Tables 1 and 2 were considered predictive variables in the regression analysis. It should also be noted that the final listed category of nature of unit assignment and that of occupational specialty, "other," were excluded from the analyses. Dummy variables were created for polychotomous items with corresponding reference variables indicated in the tables by a single asterisk.

In that a "saturated" regression model (one in which all possible combinations of reference variables are entered into the equation) was not employed, and no conclusions can be drawn about the reference variables.

Footnote 2 (Continued)

2. Both were continuous; their relationship differed significantly ($p < .05$) from linearity, and the curvilinear relationship seemed conceptually meaningful.

The Pearson-product moment correlation was derived if both variables were continuous or dichotomous and the second condition for calculating eta was not satisfied.

The means of computing regression analyses for officers and enlisted was a combination hierarchical and stepwise procedure. In that it was assumed that age and time in service are both causally and synchronously related to career intention, they were entered into the equation first and hierarchically. All other predictors were entered in a stepwise-stepwise fashion, successively adding predictors to the equation on the basis of their relative abilities to predict the criterion, but simultaneously deleting earlier predictor variables should they no longer satisfy requisite criteria after new predictors had been added. Although the criterion for initial entry was identical for the two samples (i.e., a predictor was allowed only if at least 20% of its partial correlation with the criterion was unique to it), the criteria for continued retention differed slightly. For enlisted, only variables with beta weights significant at $p \leq .05$ were retained; for officers, only those at $p \leq .09$ were retained. These two rather restrictive criteria were imposed due to the moderately high degrees of multicollinearity suggested by Tables 3 and 4.

Tables 5 and 6 summarize results of the regression analyses for enlisted and officers, respectively. For enlisted, four predictors account for 48% of the variance in reenlistment intention. For officers, even with twice as many predictors, one still is able to account for only 41% of the variance. Nevertheless, the overall relationships between predictors and criteria are high in both cases.

DISCUSSION AND IMPLICATIONS

This section will focus on findings of the analyses in terms of their relationships to past research as well as their possible implications for strategies to positively influence Army reenlistment intention. Because this project is correlational in nature, definitive statements on direction of causality between variables are not fully justified. Nevertheless, implications will be drawn based on an assumed causal relationship of predictor variables to career intention. To the extent possible, future confirmity research should be of an independent variable design. The discussion is presented in two sections; the first deals with enlisted personnel, and the second considers officers.

Predictors of Career Orientation Among Enlisted

Years in service correlates highly with expressed career intention. This finding is hardly unexpected, but it may be more thought-provoking than simply exemplifying the dictum, "Nothing predicts future behavior like past behavior." Research suggests that critical "decision points" may occur in a military career. Should a person remain in the service beyond such time points, it is likely that he or she will remain for a considerably longer period of time, perhaps even until retirement. (Typical of this research is Zald and Simon (1964), who found that if an officer remained in service beyond 4½ years, the likelihood of remaining indefinitely was 80%.) Chronological career decision points should be considered in determining when to schedule Army entitlements, bonuses, and benefits in the soldier's career.

TABLE 5

Results of Regression Analysis (Enlisted)

Predictor variable	Beta (Sig)	Simple r	Cumulative R	Amount of variance explained
Years in Service	.2878 (.000)	.58	.58	34%
Age	.3456 (.000)	.60	.62	39%
Job Satisfaction	.2966 (.000)	.47	.69	48%
Education	-.0684 (.009)	.07	.70	48%
Race--Black	.0900 (.000)	.10	.70	49%
Occupational Specialty 91	-.0786 (.002)	-.01	.70	50%
Perception of Unit Personnel	.0746 (.003)	.13	.71	50%
Occupational Specialty 13	-.0652 (.008)	-.11	.71	51%
Unit--Ranger	-.0489 (.048)	-.07	.71	51%
Religion--Other (not Protestant, Catholic, or none)	-.0489 (.049)	-.08	.71	51%

Regression Mean Square = 42.37 (10 degrees of freedom)

Residual Mean Square = .48 (838 degrees of freedom)

F-ratio of equation = 87.33, significant at $p \leq .000$

Other Variables with Partial Correlation at $p \leq .08$

Variables	Partial r	Tolerance	F-significance
Unit--Ordnance	.06	.99	.071
Unit--Military Intelligence	.06	.98	.076

TABLE 6

Results of Regression Analysis (Officers)

Predictor variable	Beta (Sig)	Simple r	Cumulative R	Amount of variance explained
Years in Service	.2684 (.019	.47	.47	22%
Age	.2473 (.039)	.39	.47	22%
Occupational Specialty--Physician	-.2324 (.000)	-.20	.52	27%
Job Satisfaction	.2258 (.000)	.24	.57	33%
Occupational Specialty--Field Artillery	-.1946 (.001)	-.11	.59	35%
Unit--Medical	-.1522 (.034	-.12	.61	37%
Deviance	-.1636 (.004)	-.15	.63	39%
Occupational Specialty--Dentist	-.1055 (.84)	-.10	.64	40%
Assessment of Unit Readiness	.0974 (.086)	.14	.64	41%

Regression Mean Square = 7.51 (9 degrees of freedom)

Residual Mean Square = .50 (196 degrees of freedom)

F-ratio of equation = 15.33, significant at $p \leq .000$

Other Variables with Partial Correlations at $p \leq .10$

Variables	Partial r	Tolerance	F-significance
Unit--Field Artillery	.19	.11	.007
Rank--Warrant Officer	-.12	.98	.099

Age is also closely related to career intention, and comments analogous to those above may also be appropriate here. In fact, age and years in service are themselves correlated at .82. Both variables likely reflect not only time and experience but also psychological maturation in terms of commitment to an occupation. Nevertheless, the correlation coefficient between age and career intention, with years in service held constant for age, is .21, which is significant at $p \leq .01$. (The relationship between age and career intention has been replicated by Bonette and Worstine, 1979.) Reenlistment rates might rise if initial recruitment efforts were targeted more toward a slightly older segment of the population than 17-year-olds. While it appears that with increasing age there is some decrement in ability to recover from prolonged physical exertion, many soldiers, even in a time of intense combat, are not directly involved in duties entailing high levels of prolonged exertion such as those in the communications zone or zone of the interior. Possible other advantages of initially enlisting slightly older soldiers is a decreased propensity to deviancy (Bell & Holz, 1975) and diminished risk of attrition during the first tour of duty (Guinn, 1977).

Job satisfaction has a very high simple correlation with reenlistment intent of .47 and contributes substantially (7%) to the criterion variance. Similar findings are reported by Holz and Schreiber (1977), Bonette and Worstine (1979), and Goldman et al. (1980). (Goldman et al. (1980) revealed correlations of .29, .32, and .22 between reenlistment intention and job satisfaction for first term, junior career, and senior career enlisted personnel, respectively.) From a unit personnel management perspective, the relationship between job satisfaction and military career intention is of more practical value than the associations of the preceding two predictors, since soldier job satisfaction is more subject to supervisory influence. Recent research (e.g., Allen & Bell, 1980; Motowidlo, Dunnette, & Rosse, 1980) suggests several job elements contributing to job satisfaction, such as variety of tasks, meaningfulness of assignments, control felt over completion of the work, pay, job security, organizational commitment, and nature of the work itself. Both in structuring assignments and describing tasks to subordinates, leaders have some flexibility even within the constraints of the mission and regulations. It might be beneficial to keep in mind the job elements related to job satisfaction when designing and assigning tasks.

Education correlates slightly with career intention and in a negative direction. Similar findings have been reported by Enns (1975). This finding is more disturbing given the beneficial effects of education on problems of deviancy, substance abuse, and attrition (Hand et al., 1977; Allen, 1980). The direction of the association is disconcerting, particularly now as more sophisticated weapon items are being introduced into the Army's inventory. This equipment will likely increase demands for operator academic skills, such as reading and numerical computation. Two possible reasons for the inverse correlation may be more competitive enticements offered by the civilian sector to those with more formal education, or the Army's failure to adequately satisfy these enlisted personnel. The relative impacts of these two causes should be assessed by further research, because resolving the problem may require different strategies depending on its cause.

Being black is positively associated with career orientation. Several previous investigations (Lindsay & Causey, 1969; Nelson, 1970; Goldman et al., 1980; and Motowidlo et al., 1980) have found similar relationships between being black and reenlistment intention. It has been suggested that the basis of the association is that blacks may feel that their career opportunities are greater in the Army than in the civilian sector. In any event, this finding is somewhat optimistic in that the force in recent years has become increasingly manned by black soldiers (Moskos, 1980).

MOS 91 is associated with diminished career intention, but the correlation is small and merits little comment. It may be that Army enlisted medical personnel feel they have better job opportunities in the civilian sector.

Perception of unit personnel is directly associated with intention to remain in the Army. Recent efforts in strengthening unit cohesiveness, if successful, may well augment not only respect among unit members for each other but also assist in retaining more soldiers in the Army. As with job satisfaction, perception of unit personnel is more likely a function of unit personnel management than of Department of the Army policy. Attempting to increase manpower figures, however, by initiatives to restrict use of the expeditious and training discharge programs may ironically lead to decreasing unit reenlistment rates should unit members thereby lose respect for their peers, feeling that even marginal performers are kept in their unit.

MOS 13 (artilleryman) is related to lower career orientation. The reasons for this are not apparent but merit further research. Possible reasons may include anticipated combat danger, physical discomfort, shortages of live fire ammunition, and lack of contribution of training to future civilian job plans. This last possibility is of concern in future Army planning. Increased technical specialization may well be required of more service members as weapons systems become more complex. Goldman, Worstine, and Bonette (1979) also found that a potent incentive for enlistment among first-term and career personnel was the opportunity the Army provides to learn a skill or trade useful in civilian life.

Ranger unit of assignment, rather surprisingly, is negatively associated with military career intention (although the relationship is small). The negative relationship is particularly unexpected considering the positive correlations between being a Ranger and job satisfaction, confidence in unit readiness, and perception of fellow unit personnel (Allen, 1980). The finding is also ironic granted Motowidlo et al.'s (1980) interesting finding that 20% of the enlisted personnel not now intending to reenlist would be more likely to reenlist for 6 years if they could be assigned to an elite unit. Possible reasons for the direction of the association may be somewhat the same as two of those hypothesized for MOS 13 (i.e., high combat risk and lack of congruence between military training and future civilian occupations). Another intriguing causal reason for the Rangers' low career intentions may be lack of career progression to "STRAC" units. The Army maintains only two Ranger battalions. Rangers seem to be indoctrinated with a strong sense of military esprit and are socialized into believing that the epitome of being an American soldier is being a Ranger. Nevertheless, when Rangers change stations they are rarely transferred to the other Ranger unit but rather "revert" to regular infantry units. If

elite units such as the Rangers continue in the Army, reenlistment intentions of soldiers assigned to these units might be raised if an ongoing "elite" career progression is available to them.

Unconventional religious persuasions are also associated with lower career intention. Although the reason for this is not apparent, it may be that endorsement of this item exemplifies generally nontraditional values. Soldiers with highly personalized or idiosyncratic values and attitudes may find it more difficult to adjust to Army routines and thought patterns than "typical" troops.

Time at the installation and rank are related to career intention, but this is probably due primarily to self-selection (i.e., the sharp rise in career intention between assignment to the installation for 36 months and 42 months is probably related to the fact that those assigned 42 months have reenlisted. Similarly, E5/6s are probably in their second enlistment.) Rank was also reported by Lindsay et al. (1969) to be related to actual reenlistment behavior among enlisted personnel. Much of the discussion on time in service pertains here.

Predictors of Career Orientation Among Officers

The most striking difference in predicting military intentions of officers as opposed to those of enlisted personnel is that the predictors for officers are less efficient. It appears that the major reason for this is greater homogeneity among officers as a group. Comparing Tables 1 and 2 reveals that officers are more similar to each other in race, marital status, religion, and congruence of training with job than are enlisted personnel. As a group, officers are more oriented to making the military a career than are enlisted (i.e., 49% of officers but only 20% of enlisted intend to stay at least until eligibility for retirement). A similar difference between officer and enlisted career aspirations is noted by Davis (1966). Nevertheless, some interesting and useful predictors of career orientation are also evident in the officer sample.

Years in service and age are positively correlated with career orientation, as they are for enlisted. The relationships are considerably stronger for enlisted and, unlike enlisted, age contributes nothing unique to the prediction of officer career intention. This lack of relationship between age per se and career intention may reflect the fact that the mean age for officers is 6 years more than that of the enlisted; hence, most officers in the survey may have passed the time of life when one has the greatest career uncertainty.

Physician and dentist occupational specialties are associated with lower career intention, although both groups of health professionals are high in job satisfaction (Allen, 1980). The Army's shortage of physicians is well known, and recently additional financial incentives were approved in an effort to retain them in the Army. The role of health care providers is of dual importance to the Army. Not only are they of obvious importance in sustaining troops in combat, but they are important to maintaining a peacetime Army since medical treatment is a major incentive for recruitment and reenlistment of other Army personnel.

Job satisfaction is related to career orientation for officers as it was for enlisted, although the simple correlation of .24 is considerably smaller than the comparable correlation of .47 for the enlisted. Bluedorn (1979), in analyzing Army officer data from 1964, reports a zero-order correlation of .72 between job satisfaction and career intention. Through critical path analysis, this researcher conceptualized job satisfaction as an intervening variable between military pay/organizational climate and career intention.

Field artillery occupational specialty is negatively associated with career intention for officers. A similar relationship was found for enlisted, and the putative reasons given earlier are probably of equal significance here.

Medical unit of assignment is inversely related to career orientation for officers. Such a finding is reminiscent of the earlier statement that physicians and dentists tend to be low in intentions to remain in the Army. In the present project, the vast majority of those indicating assignment to a medical unit were stationed at a hospital rather than at a division or post. Hospital problems, such as shortages of personnel, may help account for the relationship, but any explanation is hypothetical until additional research is undertaken.

Deviance, as measured by the six-item factor scale, was found to be related to lower career intention among officers. It may be that for officers, deviance represents adherence to a nontraditional value system or lifestyle as did the unconventional religious persuasion item for enlisted personnel. The topic of deviance and career aspiration has received considerable research attention for enlisted personnel (e.g., Holz et al., 1977). This is not the case for officers; the author was unable to find projects relating deviance to career intention.

Assessment of unit readiness, while having a significant simple correlation with career intention, does not have a significant beta weight after the variance accounted for by preceding regression variables has been explained.

Beyond the fact that correlates of career orientation are weaker for officers than for enlisted, officer predictors suggest fewer remedial actions in the realms of policy or personnel management practices.

CONCLUSION

Several factors that impinge on the Army personnel management system are largely beyond its control. These include societal conditions, for example, the civilian labor market, the American educational system, and the decline in numbers of service age youth; also included are factors intrinsic to serving in the Army, such as the risk of death in combat, necessity for overseas rotations, field training, authorizations in end-strengths, and entitlements/incentives provided to service members by Congress. Even with its extrinsic and intrinsic limitations, the Army enjoys much discretion in establishing personnel policies, working environments, training programs, assignments, etc.

The current investigation has delineated and weighted several static (personal) and dynamic (organizational) characteristics associated with military career orientation. The extent to which results derived from service members at the two installations can be generalized to the rest of the Army is an open question. The fact that for officers time at the installation is not related to career intention in the regression analysis argues that the results may be generalizable. For enlisted, the curvilinear relationship between time at the installation and career intention (see Figure 2) is likely primarily due to the contamination of time at the installation with rank and years in service. Thus enlisted results reported here may well be generalizable.

At least for enlisted personnel many of the predictors suggest recommendations to formulation of policy and doctrine as well as to applied military personnel management practices. These recommendations should be considered in light of other research dealing with attrition, retention, morale, job satisfaction, etc. The implications should ultimately be explored in terms of their potential role in contributing to the mission. The magnitude of predictor-criterion associations argue that creative problemsolving techniques, including job enrichment, recruitment of older personnel, and heightening personal respect within units, may have high payoffs in increasing rates of reenlistment.

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APPENDIX A

METHODOLOGY OF MORALE ITEMS FACTOR ANALYSIS

Responses to thirteen survey items were subjected to separate principle components extractions for officers and enlisted. Unities were imposed as initial diagonal elements in the intercorrelational matrices. Contrast of several types of rotations and varying the numbers of factors suggested that a three-factor varimax solution was most readily interpretable for each group. Final communalities for items and factorial loadings are presented in Tables 7 and 8.

Factorial solutions for the two groups appear quite similar. Examination of item-factor correlations indicate that Factor I involves a broad dimension of Army job satisfaction. The four highest loading items on Factor II suggest that it deals with confidence in the organization's ability to perform well in combat. (The variation between officer and enlisted loadings for the question: "I am concerned about the capability of my unit to accomplish our mission in combat" is believed to reflect language use differences between the two groups, possibly due to varying amounts of education. The work "concerned" seems to have been generally understood as "worried about" by officers and as "interested in" by enlisted.) Factor III appears to deal with the favorability of one's assessment of fellow unit members, particularly enlisted personnel.

Scores on the three factors were derived using the "exact" method, in which a subject's responses to <u>all</u> items, not just those with large loadings on a factor, contribute to his score.

TABLE A-1 - ROTATED MORALE FACTORS (ENLISTED)

ITEMS	LOADINGS			
	FACTOR I	FACTOR II	FACTOR III	H^2
1. Satisfaction with job assignment	<u>80</u>	12	14	68
2. Interest in job	<u>79</u>	15	08	65
3. Talents needed in job	<u>73</u>	07	09	55
4. Attitude toward Army	<u>68</u>	27	08	54
5. Recognition for job efforts	<u>64</u>	10	20	46
6. Adjudged morale of unit	<u>50</u>	<u>44</u>	<u>34</u>	56
7. Satisfaction with unit officers	<u>45</u>	<u>39</u>	23	41
8. Satisfaction with unit NCOs	<u>42</u>	26	<u>53</u>	52
9. Concern about unit capability to do mission in combat	<u>30</u>	25	-21	20
10. Current ability of unit to perform combat mission	23	<u>79</u>	23	74
11. Time needed for unit to be combat ready	08	<u>87</u>	09	77
12. Satisfaction with SP4-SP6s in unit	19	12	<u>79</u>	68
13. Satisfaction with E1-E3s in unit	03	11	<u>78</u>	62

NOTE: Decimals have been deleted throughout this table. Loadings $\geq$ 30 are underlined

TABLE A-2 - ROTATED MORALE FACTORS (OFFICERS)

ITEMS	LOADINGS			
	FACTOR I	FACTOR II	FACTOR III	H^2
1. Satisfaction with job assignment	84	14	13	75
2. Interest in job	84	07	00	71
3. Talents needed in job	84	10	00	72
4. Recognition for job efforts	67	11	15	48
5. Attitude toward Army	53	22	23	39
6. Satisfaction with unit officers	42	20	41	38
7. Adjudged morale of unit	41	47	39	54
8. Satisfaction with SP4-SP6s in unit	06	-02	86	74
9. Satisfaction with NCOs in unit	11	09	78	63
10. Satisfaction with E1-E3s in unit	09	06	75	58
11. Current ability of unit to perform combat mission	24	79	25	74
12. Time needed for unit to be combat ready	24	77	15	67
13. Concern about unit capability to do mission in combat	02	-47	12	23

NOTE: Decimals have been deleted throughout this Table. Loadings $\geq$ 30 are underlined.

APPENDIX B

ETA RELATIONSHIPS WITH CAREER INTENTION (ENLISTED)

Figures in this Appendix portray curvilinear relationships of enlisted career intention with rank and with time at the installation. These two predictor variables were not included in the regression analysis because they satisfied the three criteria for eta specified in the results section.

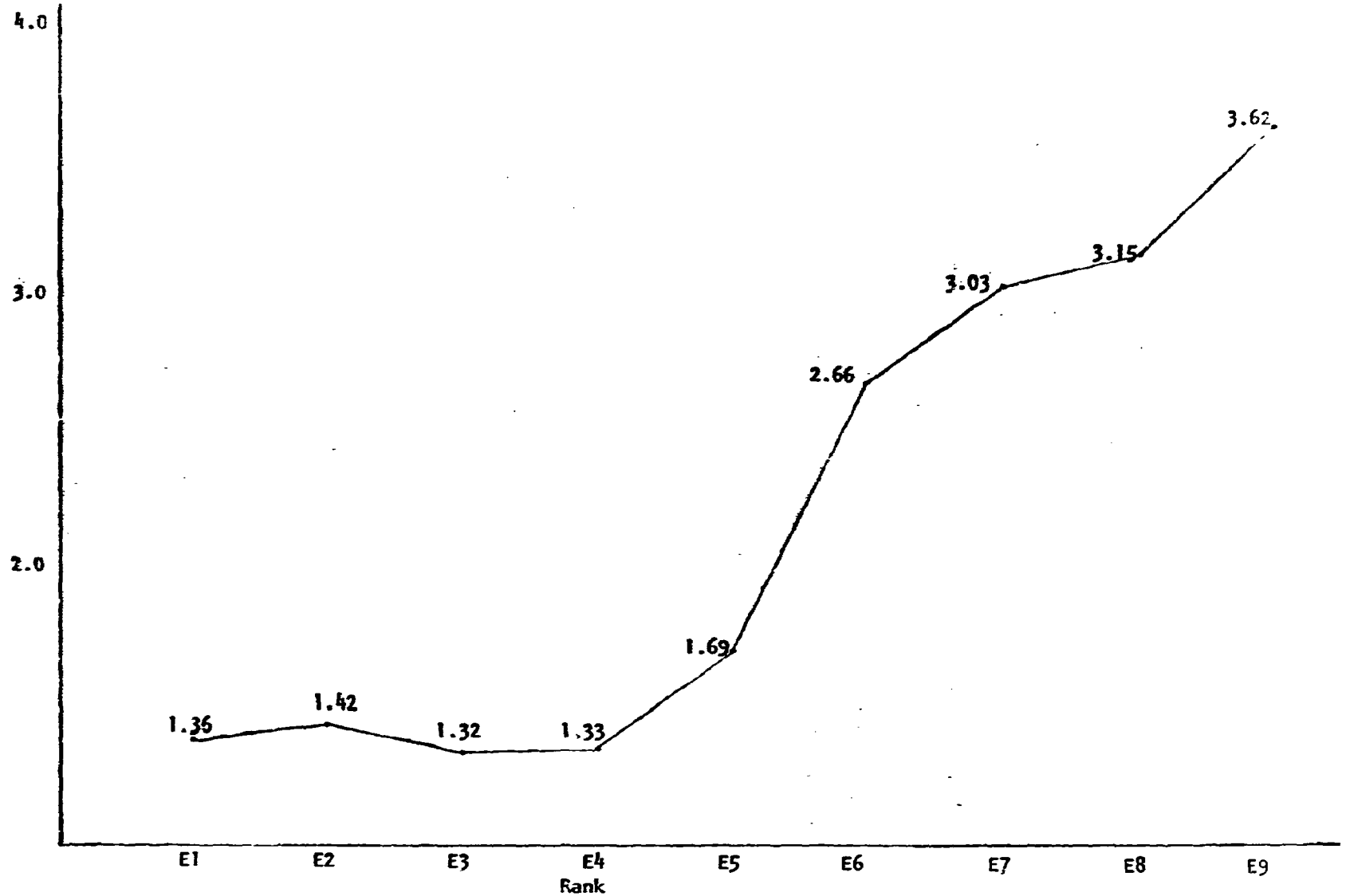

Figure B-1. Mean career intention levels by rank (enlisted).

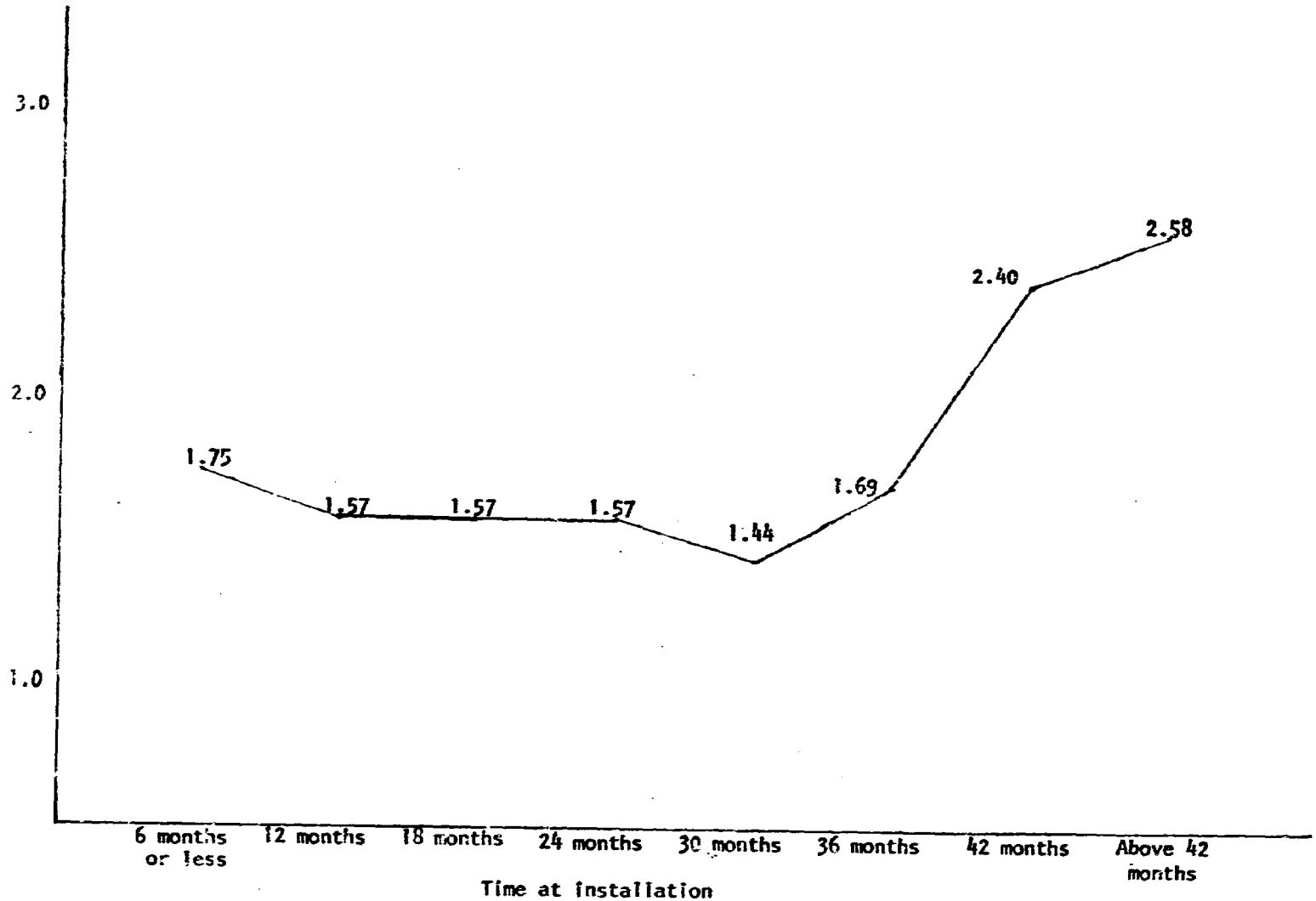

Figure B-2. Mean career intention levels by time at the installation (enlisted).

APPENDIX C

BIVARIATE RELATIONSHIPS WITH CAREER INTENTION (ENLISTED AND OFFICERS)

Figures in this appendix display relationships between nature of unit and career intention for enlisted as well as between occupational speciality and career intention for both groups. Figures C-1, C-2, and C-3 are included only to aid the reader in visualizing mean-differences in career intention related to categories of the predictor variable. In that the conditions specified in the results section for calculating eta were not satisfied, these variables were entered into the regression equation rather than treated as bivariate curvilinear relations.

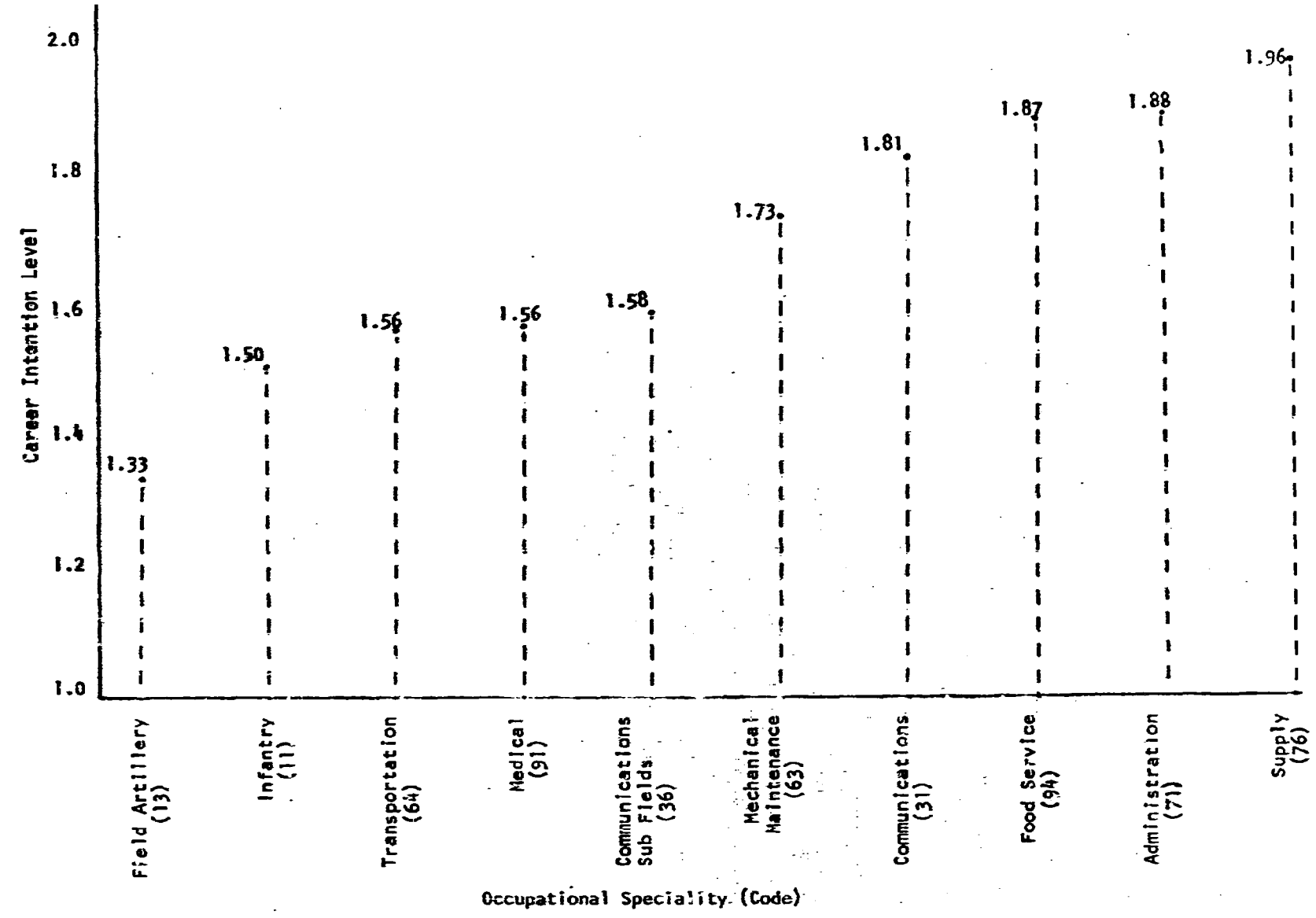

Figure C-1. Mean career intention levels of s lect occupational specialties by rank order (enlisted).

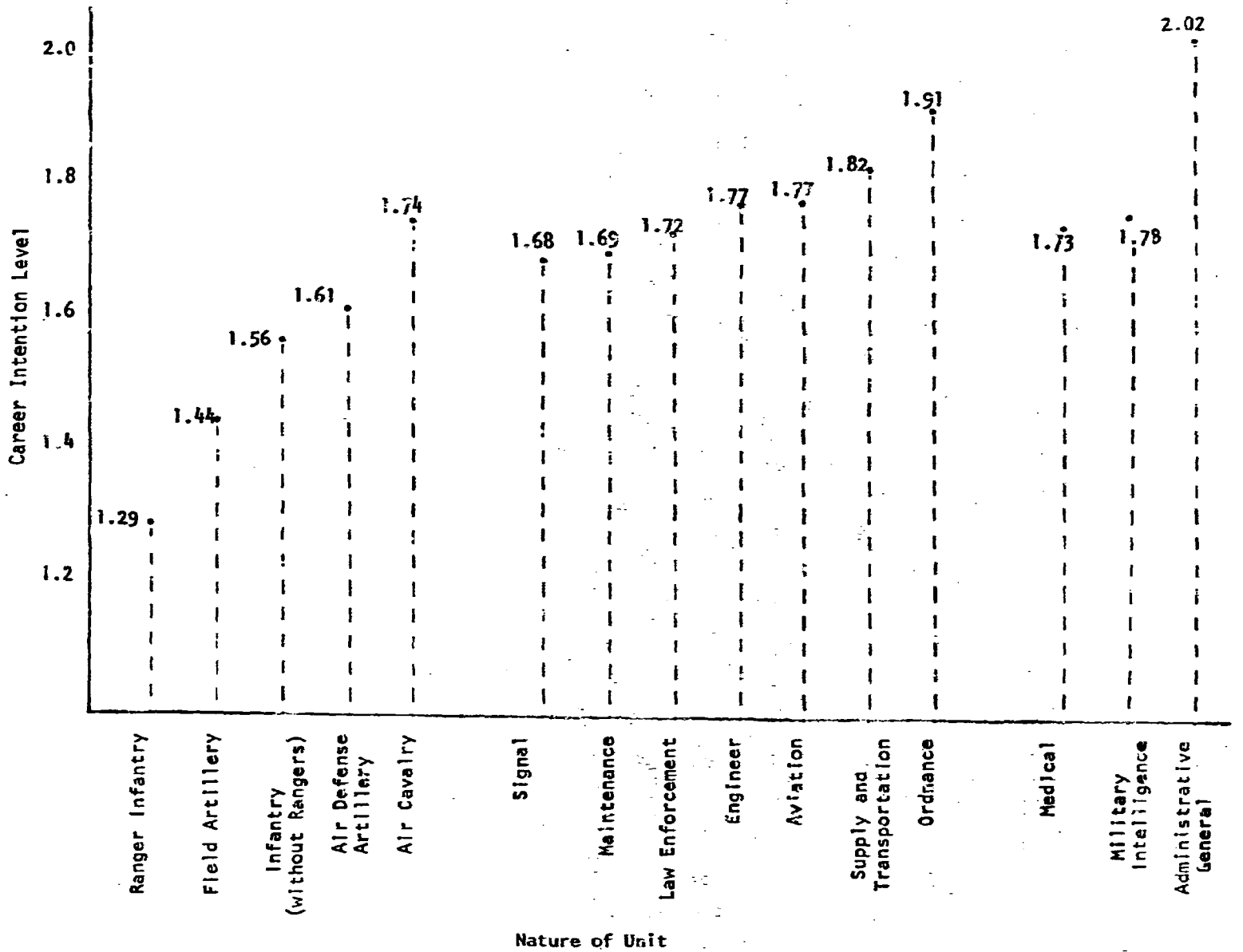

Figure C-2. Mean career intention levels by nature of unit (enlisted).

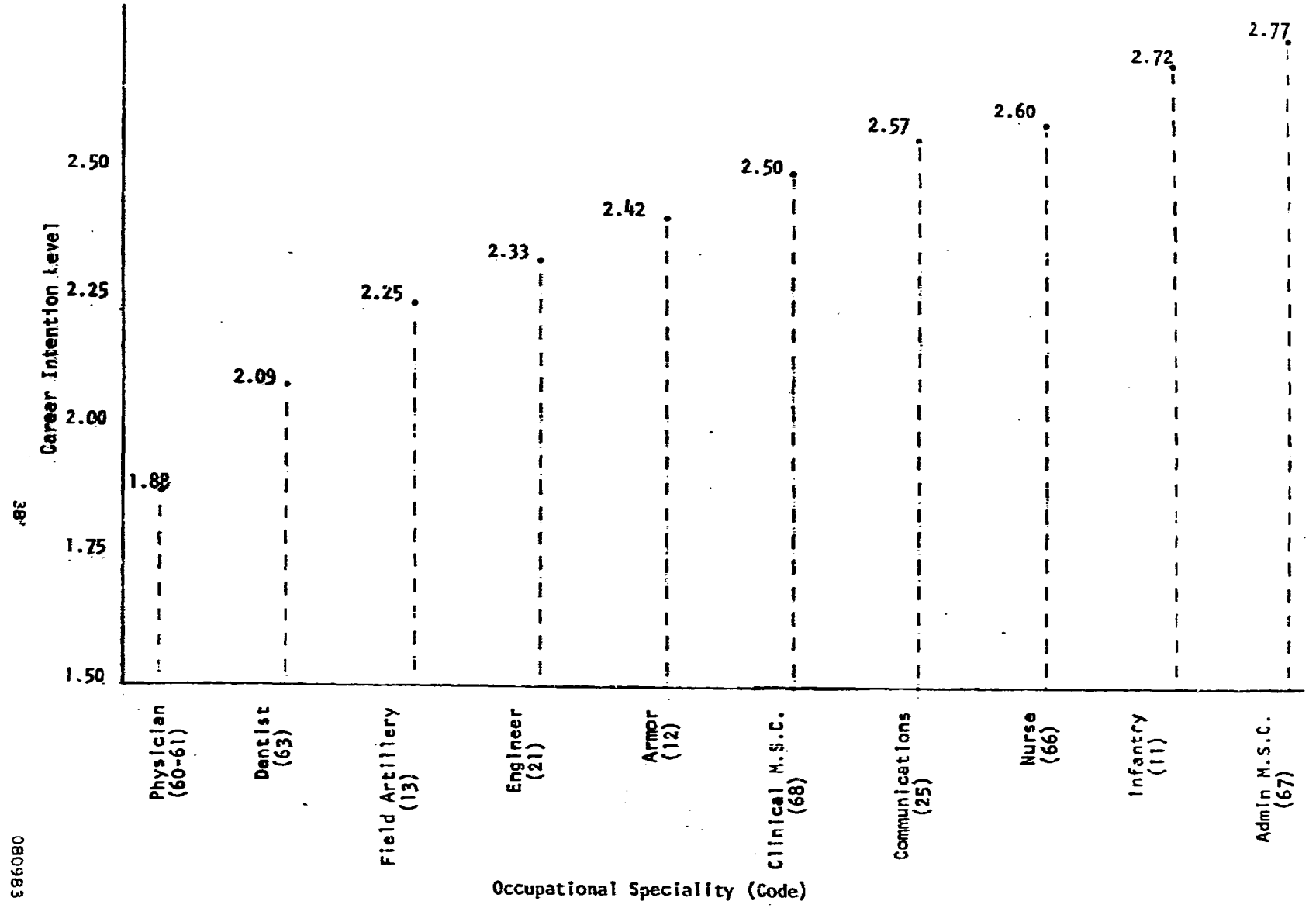

Figure C-3. Mean career intention levels of select occupational specialties by rank order (officers).